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# SNOW SURVEYS AND IRRIGATION WATER FORECASTS

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U. S. Department of Agriculture  
Washington, D. C.

FOR

## MISSOURI AND ARKANSAS RIVER BASINS

April 1, 1937

The following data pertaining to snow surveys and irrigation water-supply forecasts are provided by Bureau of Agricultural Engineering of the U. S. Department of Agriculture, in cooperation with State departments, other Federal bureaus and local organizations. 1/

Status of precipitation as of October 1 to April 1: For Montana it is reported that the average accumulative precipitation for this period in the western part was 6.68 inches or 75 percent of normal; for the central part of the state the precipitation was 4.10 inches, or 88 percent of normal. Twenty-one precipitation stations, 6000 feet or more in elevation, east of the divide in Wyoming show the precipitation to be 84 percent normal. Precipitation in the South Platte River Basin is 66 percent of normal. Seven precipitation stations, 6,000 feet or more in elevation, in the Arkansas River Basin show the precipitation to be 93 percent of normal.

In the Laramie River Basin in Colorado and Wyoming, the snow cover is good, and the soil is thoroughly saturated. Streams that were dry last year at this time are now running a good head of water. At Fox Park more than two feet of snow fell during the last half of March. It is expected that the run-off in the North Platte will be above normal. Snow cover in the Medicine Bow range has increased during March. For the Big Horn, Tongue, Powder and Belle Fourche River drainages there is a marked deficiency in the snow cover.

The snow cover on the South Platte River drainage basin on April 1, based on the records from eight snow courses, was 60 percent of the amount at this time last year, but considerably more snow has accumulated since the last observations were taken. In the Arkansas Valley drainage basin the snow cover is 80 percent of what it was last year.

Reservoir storage on the North Platte is below normal but in excess of last year. Reservoirs on the South Platte, in the plains area, are all filled and on the tributaries the storage is about normal. In the Arkansas Valley reservoir storage is considerably below normal.

Soil moisture conditions in Wyoming have improved during the past month. In the South Platte Valley there is ample moisture in the soil for plowing and for planted crops. Winter wheat is in excellent condition. Conditions in the Arkansas Valley are favorable.







Summary of Federal and State Cooperative Snow Surveys  
Bureau of Agricultural Engineering, U. S. Dept. Agr.; Forest Service; Colo. Agri. Expt. Station  
Issued April 12, 1937. Colo. Expt. Station, Fort Collins, Colo.

Tributary Basins (Primary & Secondary & Snow Courses)	Location			Elev.	April 1, Snow Cover Measurements		
	State	Sec. or Latitude	Twp. & Longitude		Average Snow Depth 1937 (Inches)	Average Snow Depth 1936 (Inches)	Average Water Content 1936 (Inches)
JEFFERSON RIVER							
Camp Creek <u>2/</u>	Idaho	21	13N	6800	39.1	27.0	10.8
Moose Creek <u>2/</u>	Idaho	22 & 27	27N	6200	40.8	--	12.4
MADISON RIVER							
Aster Creek <u>2/</u>	Wyo.	Lat. 44°17'	Long. 110°37'	7700	65.0*	87.0*	23.5*
Big Springs <u>2/</u>	Idaho	34	14N	6500	58.7	--	20.2
Hebgen Dam	Mont.	22	11S	6550	47.2	--	15.3
Lewis Lake Divide <u>2/</u>	Wyo.	Lat. 44°13'	Long. 110°40'	7900	92.0*	116.0*	33.5*
Twenty-one Mile <u>3/</u>	Mont.	1	11S	7150	51.7	--	16.3
West Yellowstone	Mont.	34 & 35	13S	6700	39.8	--	13.0
Valley View <u>2/</u>	Idaho	7	15N	6500	47.2	--	13.8
GALLATIN RIVER							
Mystic Lake No. 1	Mont.	31	3S	6600	28.7	--	6.6
Mystic Lake No. 2	Mont.	31	3S	6600	29.2	--	7.0
Twenty-one Mile <u>3/</u>	Mont.	1	11S	7150	51.7	--	16.3
MISSOURI RIVER (Between Helena & Great Falls)							
Tennile Creek							
Chessman Reservoir	Mont.	2	8N	6200	26.2	--	6.9
Tennile Creek, Lower	Mont.	13	8N	6250	30.0	--	7.3
Tennile Creek, Middle	Mont.	13	8N	7000	44.6	--	11.3
Tennile Creek, Upper	Mont.	19	8N	8000	48.0	--	13.3

\*Observations made March 16.





Tributary Basins (Primary & Secondary & Snow Courses)	Location			Elev.	April 1, Snow Cover Measurements			
	State	Sec. or Latitude & Longitude	Twp. Range		Average Snow Depth 1937 (Inches)	Average Snow Depth 1936 (Inches)	Average Water Content 1937 (Inches)	Average Water Content 1936 (Inches)
<u>MARIAS RIVER</u>								
Marias Pass	Mont.	Lat. 48°19', Long. 113°21'		5200	47.2	---	16.8	---
<u>YELLOWSTONE RIVER</u>								
<u>Headwaters of Yellowstone River</u>								
Cooke City	Mont.	25	9S	7400	30.0	---	7.3	---
Crevice Mountain No. 1	Mont.	26	9S	8400	33.8	---	8.9	---
Crevice Mountain No. 2	Mont.	25	9S	8200	33.8	---	8.8	---
<u>Shoshone River</u>								
Brooks Lake No. 2 2/	Wyo.	23	44N	9200	48.8	70.8	16.0	15.7
<u>Big Horn River</u>								
Brooks Lake No. 2	Wyo.	23	44N	9200	48.8	70.8	16.0	15.7
Ranger Creek	Wyo.	32	53N	8800	38.1	---	6.6	---
Roaring Fork	Wyo.	7	31N	10200	27.3	33.0	6.3	9.9
Shell Creek R. Sta.	Wyo.	19	53N	7700	24.5	---	4.7	---
Sheridan Creek R. Sta.	Wyo.	3	42N	7500	18.4	37.3	2.8	9.6
Whorten Meadow	Wyo.	18	31N	9200	16.4	15.4	5.0	5.8
Tensleep Ranger Station	Wyo.	30	49N	8300	30.6	---	6.1	---
<u>Powder River</u>								
Red Fork	Wyo.	18	43N	7500	26.9	---	5.4	---







Tributary Basins (Primary & Secondary & Snow Courses)	Location			Elev.	April 1, Snow Cover Measurements			
	State	Sec. or Latitude	Twp. & Longitude		Average Snow Depth 1937 (Inches)	Average Snow Depth 1936 (Inches)	Average Water Content 1937 (Inches)	Average Water Content 1936 (Inches)
<u>NORTH PLATTE RIVER</u>								
<u>Headwaters North Platte</u>								
Big Creek Lake	Colo.	9	11N	9000	47.0	---	11.3	---
Bottle Creek	Wyo.	24	14N	8200	63.0	56.4	20.7	21.6
Columbine Lodge	Colo.	21	5N	9300	58.3	89.6	18.4	32.3
Headquarters Park	Wyo.	27	16N	10100	---	88.1	---	29.7
North Barrett Creek	Wyo.	27	16N	9400	63.5	61.7	18.0	22.7
Old Battle	Wyo.	25	14N	9800	98.2	107.2	37.8	36.4
Park View	Colo.	24	5N	9200	27.6	47.0	9.6	13.5
Ryan Park	Wyo.	30	16N	8400	44.7	46.4	9.7	13.8
Webber Springs	Wyo.	27	14N	9000	70.1	77.5	26.5	26.5
West Portal Greeley-								
Poudre Tunnel	Colo.	7	8N	8600	32.2	44.8	7.7	13.7
Cameron Pass 3/	Colo.	2	6N	10285	61.1	79.6	15.3	28.7
<u>Sweetwater River</u>								
Grannier Meadows	Wyo.	19	30N	9000	47.0	---	11.6	---
<u>Laramie River</u>								
Brooklyn Lake	Wyo.	11	16N	10200	64.2	89.5	19.8	31.0
Fox Park	Wyo.	21	13N	9200	30.4	46.1	7.3	14.6
Hairpin Turn	Wyo.	24	16N	9000	36.3	54.0	10.7	16.0
Libby Lodge	Wyo.	29	16N	8800	29.6	37.0	7.9	10.5
Pole Mountain 2/	Wyo.	35	15N	8700	6.1	8.4	2.5	3.3





Tributary Basins (Primary & Secondary & Snow Courses)	Location			April 1, Snow Cover Measurements			
	State	Sec. or Latitude	Twp. & Longitude	Elev.	Average Snow Depth 1937 (Inches)	Average Snow Depth 1936 (Inches)	Average Water Content 1936 (Inches)
SOUTH PLATTE RIVER							
Big South	Colo.	33	8N	8600	7.0	13.2	3.5
Cameron Pass <u>3/</u>	Colo.	2	6N	10285	61.1	79.6	28.7
Chambers Lake	Colo.	6	7N	9000	14.9	35.4	13.8
Deadman Hill	Colo.	26	10N	10950	46.2	--	--
East Portal Moffat Tunnel	"	2	2S	9400	9.0	20.4	5.1
Fairplay	Colo.	33	9S	10000	Trace	0	0
Hidden Valley	Colo.	24	5N	9000	8.8	20.2	5.4
Hoosier Pass	Colo.	13	8S	11400	30.4	58.6	19.7
Jefferson Creek	Colo.	23	7S	10050	6.4	--	--
Loveland Pass	Colo.	27	4S	10100	41.8	55.8	15.8
Pole Mountain	Wyo.	35	15N	8700	6.1	8.4	3.3
University Camp	Colo.	28	1N	10000	0	--	--
Wild Basin	Colo.	24	3N	10000	44.2	64.4	20.7
ARKANSAS RIVER							
Four Mile Park	Colo.	23	11S	9700	0	12.5	3.7
Fremont Pass <u>2/</u>	Colo.	2	8S	11300	44.8	40.2	22.2
LaVeta Pass <u>2/</u>	Colo.	23	23S	10500	31.5	8.5	2.0
Marshall Creek <u>3/</u>	Colo.	24	48N	10846	45.1	49.3	18.0
Poncha Creek	Colo.	19	48N	10500	28.5	36.1	12.3
Tennessee Pass	Colo.	21	8S	10200	28.0	46.2	13.1
Twin Lakes Tunnel	Colo.	22	11S	10125	33.2	50.8	12.7
Whiskey Creek	Colo.	31	32N	10250	33.8	--	--

1/ The snow measurements are made principally by field personnel of the following Federal Government organizations: Forest Service, National Park Service, Geological Survey, Bureau of Reclamation; and Montana Agricultural Experiment Station. This work is otherwise conducted cooperatively with the War Department, the State Engineers of Wyoming and Colorado, U. S. Weather Bureau, U. S. Geological Survey, Montana and Colorado Agricultural Experiment Stations, and various municipalities, irrigation associations, power companies, and others.

2/ In adjacent drainage.

3/ Common to two drainages.

(4510-37)

